9:00 a.m.

844-3 **Comparative Outcomes of Percutaneous Coronary Interventions in Diabetics Versus Nondiabetics With Prior Coronary Artery Bypass Grafting**

Verghese Mathew, Stephanie Wilson, Gregory W. Barsness, Robert L. Frye, Ryan Lennon, David R. Holmes, Jr., *Mayo Clinic and Foundation, Rochester, Minnesota.*

Background: Randomized data suggests that coronary artery bypass graft (CABG) is superior to percutaneous coronary intervention (PCI) as an initial revascularization strategy in diabetics with multi-vessel coronary disease, although these data excluded patients with prior CABG.
Methods: Patients with prior CABG undergoing PCI from January 1, 1996 through August 31, 2000 were divided into two groups based on whether or not they had diabetes, excluding patients with acute infarction or shock. Cox proportional hazards models were utilized to estimate the association between diabetes and adverse events.
Results: 1,153 post-CABG PCI patients were identified (326 diabetics and 827 non-diabetics). Diabetics were younger, more likely to have hypertension, heart failure, and lower ejection fraction. Procedural characteristics and angiographic and procedural success rates were similar.
Diabetes was associated with increased mortality (hazard ratio (HR) 1.58, 95 % confidence intervals (CI) 1.10 - 2.27). Diabetes did not have a significant effect on mortality in patients treated for single territory coronary disease (HR 1.44, 95 % CI 0.69 - 3.02), but did in patients with multi-territory disease (HR 1.79, 95% CI 1.16-2.76). However, in diabetics with multi-territory disease who were completely revascularized with PCI, mortality was comparable to non-diabetics (HR 1.32, 95 % CI 0.57 - 3.03).
Conclusion: Among PCI patients with prior CABG, diabetes portends an adverse prognosis, although diabetics treated for single territory coronary disease or multiple territory disease undergoing complete percutaneous revascularization had comparable survival to non-diabetics.

9:15 a.m.

844-4 **Impact of Diabetes on Out-of-Hospital Survival Following Percutaneous Coronary Intervention: A Case-Control Study**

Sean R. Wilson, Babak A. Vakili, Warren Sherman, Kumar L. Ravi, Timothy A. Sanborn, David L. Brown, *Albert Einstein College of Medicine/Montefiore Medical Center, Bronx, New York.*

Background: Based upon data derived prior to the availability of coronary stents, diabetics are thought to have impaired survival following percutaneous coronary intervention (PCI) compared to non-diabetics. We sought to determine whether diabetics continue to have greater mortality than non-diabetics following PCI performed in the era of widespread availability of coronary stents.
Methods: Three hospitals in New York City contributed prospectively defined data elements on 4400 consecutive patients undergoing PCI. From this data set, 851 diabetics were identified and matched for age, gender and extent of coronary disease to 851 non-diabetics. Mortality rates at a mean follow-up of 2.4 years were compared using Kaplan-Meier and Cox proportional hazards models.
Results: In both groups the mean age was 63.4 years, 38% of patients were females, 43% had 1-vessel coronary artery disease (CAD), 32% had 2-vessel CAD and 24% had 3-vessel CAD. Diabetic patients had a greater incidence of hypertension (77% vs. 71%, P=0.002), congestive heart failure on admission (7.6% vs. 3.7%, P=0.001), renal insufficiency (4.2% vs. 1.6%, P=0.002) and dialysis (3.4% vs. 1.3%, P=0.004). Prior myocardial infarction (MI) was noted in 35% of both groups. An MI within 24 hours of PCI was diagnosed in 5.5% of diabetics and 6.5% of non-diabetics (P=NS). The mean ejection fraction of diabetics was 50% compared to 51% for non-diabetics (P=0.005). Stents were placed in 77% of diabetics and 79% of non-diabetics (P=NS). GP IIb/IIIa inhibitors were administered to 24% of diabetics and non-diabetics. Procedural success was 97% in both groups. In-hospital mortality was 0.8% for diabetics and 0.2% for non-diabetics (P=0.095). At a mean follow-up of 2.4 years, the mortality rate for diabetics was 14.2% compared to 6.8% for non-diabetics (Hazard Ratio: 1.73, 95% Confidence Interval 1.22-2.44, P=0.002).
Conclusion: Diabetic patients continue to experience increased mortality compared to non-diabetics following PCI. Additional studies are required to define the optimal treatment of CAD in these patients.

9:30 a.m.

844-5 **Comparison With Coronary Stent and Cutting Balloon in Small Coronary Vessels in Diabetic Patients**

Katsuhiro Kawaguchi, Taizo Kondo, Tomomichi Suzuki, Yoshio Kakegawa, Yoshifumi Awaji, *Komaki City Hospital, Komaki City, Japan.*

Background: Diabetic patients have an increased incidence of cardiac events and restenosis compared with non-diabetic patients after percutaneous coronary interventions. The efficacy of coronary intervention for small vessels in diabetic patients is unknown.
Methods: We performed elective coronary angioplasty using cutting balloon (CB) in 51 diabetic patients, and stent in 35 diabetic patients, with a reference vessel <2.6mm in diameter. Chronic total occlusions, in-stent restenosis, rotational atherectomy followed by stenting were excluded in this study. Results: Stent group patients were older than CB group patients (66.0 vs. 61.0 years; p<0.01). There were no significant differences in other baseline clinical characteristics between two groups. QCA analysis and restenosis rate are presented below. Conclusions: In spite of better initial angiographic results, stenting in small vessels in diabetic patients does not provide any benefit in terms of angiographical restenosis and clinical outcome as compared to cutting balloon angioplasty. These results suggest that cutting balloon angioplasty with provisional stenting might be a better option for treating lesions in small coronary vessels in diabetic patients.

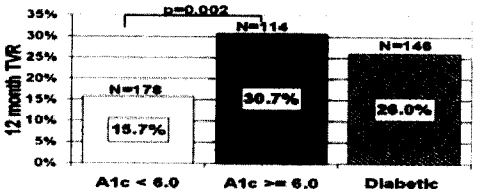
	Cutting balloon	Stent	p value
Clinical success	80.7%	97.1%	0.02
Reference diameter, mm	2.22±0.27	2.20±0.25	NS
De novo lesion	73.7%	68.6%	NS
Lesion length, mm	10.01±4.50	11.98±4.93	NS
Pre MLD, mm	0.71±0.18	0.63±0.21	0.04
Post MLD, mm	1.72±0.36	2.27±0.28	<0.0001
F/U MLD, mm	1.19±0.50	1.19±0.53	NS
Restenosis rate	31.7%	40.7%	NS
MACE, TLR (<6month)	31.7%	38.2%	NS

9:45 a.m.

844-6 **Abnormal Hemoglobin A1c Is Associated With an Increased Rate of Target Vessel Revascularization in Nondiabetic Patients Undergoing Percutaneous Coronary Revascularization**

Roberto A. Corpus, Jr., Judith A. Boura, Steven C. Ajluni, William H. Devlin, Simon R. Dixon, Gerald C. Timmis, William W. O'Neill, *William Beaumont Hospital, Royal Oak, Michigan.*

Background: Prior studies have demonstrated that abnormalities in plasma glucose below the "diabetic range' of glycemia are associated with increased cardiovascular mortality in nondiabetic (nonDM) patients (pts). We examined the association between glycemic control as determined by hemoglobin A1c (A1c) and incidence of target vessel revascularization (TVR) in nonDM undergoing elective percutaneous coronary intervention (PCI).
Methods: Baseline laboratory studies including A1c were drawn in 438 consecutive pts prior to elective PCI. NonDM pts were defined as pts without a history of diet or pharmacologically controlled diabetes and A1c ≤ 7.0. Pts were followed for 1 year after the index PCI.
Results: Of the 438 pts enrolled, 292 (66%) were nonDM. An abnormal A1c was found in 39% of nonDM. NonDM with A1c ≥ 6.0% were more often male, had higher triglycerides and prior history of MI compared to nonDM with A1c < 6.0%. NonDM with A1c ≥ 6.0% had a similar rate of TVR compared to diabetic pts (p=NS), but a significantly higher rate of TVR compared to nonDM with A1c < 6.0% (p=0.002).



Conclusions: In nonDM pts undergoing PCI, the incidence of chronic hyperglycemia as determined by A1c ≥ 6.0% is approximately 40%. Among nonDM, A1c ≥ 6.0% is associated with a significantly higher rate of TVR. These data suggest that screening for hyperglycemia may be beneficial in pts undergoing PCI. Further studies are needed to determine if lifestyle modification and/or pharmacologic therapy would be beneficial in this high-risk population.

POSTER SESSION

1148 Percutaneous Coronary Intervention I

Tuesday, March 19, 2002, 9:00 a.m.-11:00 a.m.
Georgia World Congress Center, Hall G
Presentation Hour: 9:00 a.m.-10:00 a.m.

1148-1 **Pulmonary Function Tests After Revascularization**

Gordon E. Pate, Michelle Agnew, Brendan Foley, Peter Crean, Finbarr O'Connell, Michael J. Walsh, *Saint James's Hospital, Dublin, Ireland.*

Background: Percutaneous transluminal coronary angioplasty (PTCA) and coronary artery bypass surgery (CABG) are almost equivalent in terms of symptom relief, complications and mortality. The importance of non-cardiac effects of revascularisation, such as neuro-cognitive decline,is increasingly being recognized.
Methods: This study examined the effects of PTCA on PFTs in 33 patients at six weeks and again at six months. This was compared with PFTs in 33 patients before and six months after CABG.
Results: At six months after PTCA there was a drop in FEV1/FVC ratio from 78% to 76% (p<0.02) compared to baseline, due to a small increase in FVC (forced vital capacity) which was statistically significant at 6 weeks (+5%, p<0.03) but not at 6 months (+3%, p=0.23). There was a drop in FEF25-75% (-8%, p<0.05). There had been no significant changes in FEV1/FVC or FEF25-75% at six weeks. At neither six weeks nor at six months were there any statistically significant changes in FEV1 (forced expiratory vol-